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S/N: 10/649,012  
Page 2 of 7

**Amendments to the Claims:**

The following claim listing is intended to replace previous claim listings.

Claims 1 and 3 are amended.

Claims 15 and 16 are new.

**Listing of Claims:**

1. (Currently Amended) A hydrocarbon sensor comprising a substrate made of a solid electrolyte that conducts protons, and a pair of electrodes formed on the substrate,  
wherein at least one electrode of the pair of electrodes contains Au and Al,  
~~at least part of the Al is present in~~ elemental aluminum and aluminum oxide are present  
~~in the at least one electrode as at least one selected from the group consisting of elemental~~  
~~aluminum and aluminum oxide,~~ and assuming that a content of elemental Al in the at least one  
electrode is "a" mol%, and a content of aluminum oxide in the at least one electrode is "b"  
mol%, "a" and "b" satisfy a relationship:  $a + 2b \leq 7$ ,  
~~at least one of the elemental aluminum and aluminum oxide is contained in a mixed state~~  
~~in the at least one electrode,~~ and  
the at least one electrode contains at least one metal selected from the group consisting of  
an AuAl<sub>2</sub> alloy and elemental Au, wherein the total mol% of the metals selected from the group  
is at least 50 mol%.
2. (Canceled)

S/N: 10/649,012  
Page 3 of 7

3. (Currently Amended) A hydrocarbon sensor according to claim 1, wherein the at least one electrode contains  $\text{AuAl}_2$  and elemental Au in a molar ratio of  $\text{AuAl}_2 : \text{Au} = X : 1-X$ , where X is at least ~~0.6~~ 0.62 and ~~less than 1~~ at most 0.88.

4-13. (Canceled)

14. (Previously Presented) A hydrocarbon sensor according to claim 1, wherein the  $\text{AuAl}_2$  alloy and the at least one of elemental aluminum and aluminum oxide are contained in a mixed state in the at least one electrode.

15. (New) A hydrocarbon sensor according to claim 1, wherein the at least one electrode and its lead are connected to each other via a conductive adhesive containing Pt and Au or a conductive adhesive containing Al and Au.

16. (New) A hydrocarbon sensor according to claim 1, wherein the at least one electrode and its lead are connected to each other via a conductive containing Al and Au, and  
a component of the at least one electrode is the same as a component of metal contained in the conductive adhesive.